

REMARKS

Status of the Claims

Upon entry of the present amendment, claims 31-63 will remain pending in the above-identified application. Claims 1-30 have been cancelled without prejudice or disclaimer of the subject matter contained therein. New claims 31-63 are added.

New claims 31-56 (*i.e.*, process claims) correspond to the elected group (Group I, claims 1-21); new claims 57-64 (*i.e.*, product claims) correspond to the non-elected groups, which are withdrawn from consideration based on an earlier restriction requirement of the Examiner.

New claim 31 is added based on previous claims 1, 2 and 5 and disclosure at page 9, line 8 of the instant specification. New claim 32 corresponds to previous claim 3. New claims 33-35 are added based on previous claim 4, respectively. New claim 36 is added on previous claim 5 and the disclosure at page 9, lines 8-9 of the instant specification. New claim 37 corresponds to previous claim 6. New claims 38 and 39 are added based on previous claim 7, respectively. New claim 40 corresponds to previous claim 8. New claim 41 corresponds to previous claim 11. New claim 42 corresponds to previous claim 12. New claim 43 corresponds to previous claim 12. New claims 44-46 are added based on previous claim 14, respectively. New claim 47 corresponds to previous claim 15. New claim 48 corresponds to previous claim 16. New claim 48 corresponds to previous claim 16. New claim 49 corresponds to previous claim 17. New claim 50 corresponds to previous claim 18. New claim 51 corresponds to previous claim 19. New claim 52 corresponds to previous claim 20. New claims 53-55 are added based on previous claim 21, respectively.

New claims 56 and 57 correspond to previous claims 22 and 23, respectively. New claim 58 is added on previous claim 25 and the disclosure at page 9, lines 6-7 of the instant

specification. New claim 59 corresponds to previous claim 27. New claims 60 and 61 are added based on previous claim 28, respectively. New claim 62 corresponds to previous claim 29. New claim 63 corresponds to previous claim 30.

Accordingly, the present amendments to the claims do not introduce new matter into the application as originally filed. As such entry of the instant amendment and favorable action on the merits is earnestly solicited at present.

Claim Objections

The Examiner has objected to claims 1, 4, 5, 11, 13-15, 18, 20 and 21 because of several informalities. The objections are respectfully traversed.

In order to overcome the objections, previous claims 1-30 are cancelled and new claims 31-63 are added. The informalities as pointed out in the Office Action are removed or corrected in the new claims. Thus, reconsideration and withdrawal of the objections are respectfully requested based on the new claims.

Specification Objection

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter in connection with claim 10. The objection is respectfully traversed.

In this response, since claim 10 is cancelled and the term "aldehyde" is not recited in the claims, as currently presented, the objection is rendered moot. Reconsideration and withdrawal of the objection is respectfully requested.

Rejection Under 35 U.S.C. § 112, 2nd Paragraph

Claims 1-21 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The rejection is respectfully traversed.

In order to overcome the rejection, previous claims 1-30 are cancelled and new claims 31-63 are added. The informalities and the grammatical errors, as pointed out in the Office Action, are removed or corrected in the new claims to further clarify the claimed invention. Thus, reconsideration and withdrawal of the rejection are respectfully requested based on the new claims, as currently presented.

Rejections under 35 U.S.C. §103

Claims 1, 3, 4, 6, 8, 9, 12-16 and 18-21 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Bengs et al. US '459 (US 6,562,459). (Rejection 1)

Claims 5 and 7 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Bengs et al. US '459, in view of Tanaka US '449 (US 6,617,449). (Rejection 2)

Further, claims 10 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Bengs et al. US '459 in view of Maheras et al. US '304 (US 5,507,304). (Rejection 3)

Claims 2 and 11 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Bengs et al. US '459, in view of Rudolph et al. US '392 (US 4,011,392). (Rejection 4)

Claims 17 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Bengs et al. US '459, in view of Portnoy et al. US '186 (US 4,716,186). (Rejection 5)

The rejections are respectfully traversed.

First of all, in this response, independent claim 31 recites the features of previous claims 1, 2 and 5. Therefore, at least Rejections 1 and 3-5 are overcome upon entry of the current amendments to the claims. Thus, the following explanations are especially provided in connection with Rejection 2 (obviousness over Bengs et al. US '459 in view of Tanaka US '449).

The present invention is directed to a method of manufacturing a starch-based pigment or filler. As recited in new independent claim 31, a starch derivative having a glass transition point of 60°C to 350°C is employed. (Also, see page 9, lines 7-8 of the instant specification.) Further, in the claimed invention, water is employed as a non-solvent. (Also, see the description on page 9, lines 24 to 26 of the instant specification). More specifically, the claimed starch derivative with the claimed glass transition point is dissolved in the mixture of the solvent and water. It is noted that working Examples 1 to 7, 9 to 14 and 16, as disclosed in the instant specification, correspond to independent claim 31.

In the present invention, the claimed starch derivative, which is thermoplastic, is employed, and water is employed as non-solvent is employed, whereas organic solvent is used in as small amount as possible. There are considerable advantages due to the claimed starch derivative used in a variety of the products. It is noted that when the claimed particles (e.g., thermoplastic particles) are used, e.g. as pigments for paper, they are deformed during calendering and thus give a gloss-property to the paper.

Further, water has advantageous properties over organic precipitants. Thus, a pigment, which is produced in an aqueous phase, can be subjected to a further process in an aqueous slurry without separating or cleaning it.

Furthermore, it is much easier to recycle water than solvents. Also, it is possible to reduce the total amount of solvents needed in a manufacture by using the combination of solvent and water. As disclosed in the instant specification (*e.g.*, page 10, lines 28-31), according to the claimed invention, since a small amount of solvent is used for dissolving the claimed starch derivative (see claim 32). Further, it is important that the precipitation is quickly and completely conducted, since solvent residues impair the optical properties of the precipitated particles (See, *e.g.*, Example 1). By using the claimed (aqueous) mixture for dissolution, the solution will be brought to the precipitation point by adding water. Since the mixture of solvent and water are employed for the dissolution, the solvent and the water need to be miscible, thereby the precipitation can be effectively conducted since the precipitant can be quickly mixed into the solution.

However, the cited references (*i.e.*, Bengs et al. US '459 and Tanaka US '449) fail to disclose or suggest the claimed features and the advantageous properties, as explained above. (See also page 4, lines 31-34 and page 5, lines 1-17 of the instant specification).

Therefore, there is not provided any rationale and/or reasonable expectation of success based on the combination of the cited references, by which one skilled in the art could arrive at the present invention as claimed, since the cited references fail to disclose or suggest each of the instantly claimed features, as explained above. Thus, it is submitted that the present invention is not obvious over Bengs et al. US '459 in view of Tanaka US '449.

Based on the foregoing considerations, Applicants respectfully request that the Examiner withdraw the rejections.

CONCLUSION

Based upon the amendments and remarks presented herein, the Examiner is respectfully requested to issue a Notice of Allowance clearly indicating that each of the pending claims is allowed.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Toyohiko Konno, Reg. No. L0053 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Director is hereby authorized in this, concurrent, and future replies to charge any fees required during the pendency of the above-identified application or credit any overpayment to Deposit Account No. 02-2448.

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Respectfully submitted,

By 

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